



# ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: PW1133G-JM BYPASS RATIO: 11.6  
 UNIQUE ID NUMBER: 01P18PW157 PRESSURE RATIO ( $\pi_{co}$ ): 38.1  
 COMBUSTOR: TALON X, Block-C  
 ENGINE TYPE: TF RATED THRUST ( $F_{oo}$ ) (kN): 147.3

### REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NO <sub>x</sub>	SMOKE NUMBER
$D_p/F_{oo}$ (g/kN) or SN	0.4	26.9	33.6	16.7
AS % OF ORIGINAL LIMIT	2.0	23.0	29.0	78.0
AS % OF CAEP/2 LIMIT (NO <sub>x</sub> )			36.0	
AS % OF CAEP/4 LIMIT (NO <sub>x</sub> )			40.0	
AS % OF CAEP/6 LIMIT (NO <sub>x</sub> )			45.0	
AS % OF CAEP/8 LIMIT (NO <sub>x</sub> )			51.0	

For non-volatile particulate matter (nvPM) emissions, please refer to the ICAO Engine nvPM Emissions Data Sheet.

### DATA STATUS

- PRE-REGULATION  
 x CERTIFICATION  
 - REVISED (SEE REMARKS)

### TEST ENGINE STATUS

- NEWLY MANUFACTURED ENGINES  
 x DEDICATED ENGINES TO PRODUCTION STANDARD  
 - OTHER (SEE REMARKS)

### EMISSIONS STATUS

x DATA CORRECTED TO REFERENCE  
 (ANNEX 16 VOLUME II)

### CURRENT ENGINE STATUS

(IN PRODUCTION, IN SERVICE UNLESS OTHERWISE NOTED)  
 x OUT OF PRODUCTION (DATE: - )  
 - OUT OF SERVICE (DATE: - )

### MEASURED DATA

MODE	POWER SETTING (% $F_{oo}$ )	TIME (minutes)	FUEL FLOW (kg/s)	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
				HC	CO	NO <sub>x</sub>	
TAKE-OFF	100	0.7	1.023	0.02	0.23	25.46	15.2
CLIMB OUT	85	2.2	0.839	0.05	0.22	19.84	13.9
APPROACH	30	4.0	0.278	0.02	3.44	9.40	0.5
IDLE	7	26.0	0.099	0.26	24.06	5.31	1.0
LTO TOTAL FUEL (kg) or EMISSIONS (g)			375	48	3971	4736	-
NUMBER OF ENGINES				3	3	3	3
NUMBER OF TESTS				9	9	9	9
AVERAGE $D_p/F_{oo}$ (g/kN) or AVERAGE SN (MAX)				0.4	24.9	31.3	15.2
SIGMA ( $D_p/F_{oo}$ in g/kN, or SN)							
RANGE ( $D_p/F_{oo}$ in g/kN, or SN)							

### ACCESSORY LOADS

POWER EXTRACTION 0 (kW) AT - POWER SETTINGS  
 STAGE BLEED 0 (% CORE FLOW) AT - POWER SETTINGS

### ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	100.9-103
TEMPERATURE (K)	266.2-298.7
ABS HUMIDITY (kg/kg)	0.00036-0.01437

### FUEL

SPEC	Jet A
H/C	1.86
AROM (%)	15.1-16.6

MANUFACTURER: Pratt & Whitney  
 TEST ORGANIZATION: Pratt & Whitney  
 TEST LOCATION: X7 Test Stand, East Hartford, CT  
 TEST DATES: 02/03/2017-19/09/2017

### NO<sub>x</sub> REGULATION PARAGRAPH

	2.3.2 c) (CAEP/4)
	2.3.2 d) (CAEP/6)
x	2.3.2 e) (CAEP/8)

### REMARKS

- Data from Certification Report PWA-11521, 3 engines tested, block C combustor
- Certification in accordance with Part III, Chapter 2, of Amendment 8 of ICAO Annex 16 Vol. II.
- NO<sub>x</sub> levels in accordance with Part III, Chapter 2, 2.3.2 e) (CAEP/8)

Compliance with Fuel Venting requirements:

x ('x' if complies, 'PR' if pre-regulation, '- ' if information is not available)